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The Educational Psychology
of Juan Luis Vives

By

WALTER ALOYSIUS DALY, PH.M.

of the Archdiocese of St. Paul

A DISSERTATION

Submitted to the Faculty of Philosophy of the
Catholic University of America in partial
fulfilment of the requirements for the
Degree of Doctor of Philosophy

Washington, D. C., 1924

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NIHIL OBSTAT.

✠ THOMAS J. SHAHAN,
Episcopus Germanicopolitanus.
Censor Deputatus,

Washingtonii, D. C., die VIII Maii, 1924.

IMPRIMATUR.

✠ MICHAEL J. CURLEY,
Archiepiscopus Baltimorensis.

Baltimoræ, die VIII Maii, 1924.

To

THE MOST REVEREND AUSTIN DOWLING, S.T.D.

Archbishop of St. Paul

This Monograph Is Respectfully Dedicated

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PREFACE

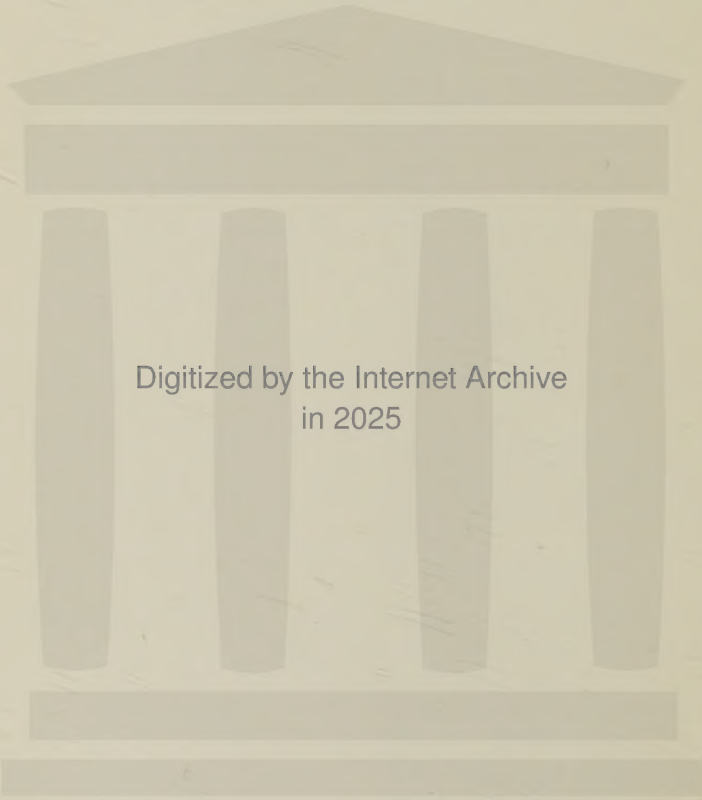
The object of this dissertation is to submit the evidence in support of the claim that the main educational principles of the psychologists of the nineteenth century are found in the theoretical and practical writings of Vives on education. The position of Vives as an educator will be discussed in the opening chapter. For this we shall depend upon the opinions of his contemporaries and of others, who have spoken of his writings in the succeeding centuries. As an aid to a clearer understanding of his educational principles, in the second chapter there will be given a brief description of his interpretation of the functions of the external and internal senses and those of the intellectual faculties which pertain to this study. The last chapter will contain a comparison of the more prominent principles in the educational method of Pestalozzi, Herbart and Froebel with those of Vives. The writings of Vives to which reference will be made are *De Disciplinis*, *De Ratione Studii Puerilis* (for a boy and for a girl) and the *De Anima et Vita*.

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CHAPTER I.

JUAN LUIS VIVES

PART I. HIS EDUCATIONAL POSITION

The purpose of this opening chapter is to establish the educational position of Juan Luis Vives. This requires a summary of the reasons why he was not the leader he deserved to be; a presentation of the opinions of his contemporaries and of one or two leading educators in each century down to the present time regarding him; a few references to some noted men who seem to have taken whole passages from his writings and to others who expressed the very same ideas, and a statement concerning the recent attempts made to gain for Vives the lofty position which his writings merit. In the second part there is given a brief sketch of his life.

Juan Luis Vives was not the leader in education that he deserved to be. The reasons advanced for this are as follows: in Germany his lack of sympathy with the Reformation; in England his attitude toward the divorce of Henry VIII and Queen Catherine; in France the spirit of revolt that swept the land; in Spain his early departure and his relations with the royal court of England.

He was, however, recognized as a learned and scholarly man by his contemporaries. Blessed Thomas More in a letter to Erasmus, referring to the works of Vives, said: "*Quibus necque magis elegans, neque magis eruditum quicquam iam diu vidi.*"¹ More continues: "I am ashamed, My Erasmus, of myself and

¹ Erasmus Desiderius, *Epistolarum Opus*. Vol. I, pp. 439-440, Basileae, 1558.

those, who have had similar opportunities, who are satisfied with this or that insignificant booklet, when I see Vives, a young man, the author of so many thoroughly excellent works, superb in style and rich in learning. It is a great thing to be polished in one of the (classical) languages. He has shown himself well versed in both. But it is a greater and more fruitful accomplishment to be thoroughly trained, as he is, in the highest branches of knowledge. Who is there, who is better instructed than Vives in the number and quality of his studies? The greatest achievement of all is, that he mastered these subjects in such a way that he is able to instruct others and, who is there, who instructs more clearly, pleasantly and effectively than he does.”¹ Erasmus in reply to Thomas More had this to say: “Concerning the ability of Ludovicus Vives, I rejoice that my opinion of him harmonizes with yours. He is one of the number of those, who will overshadow the name of Erasmus. (Is unus est de numero eorum, qui nomen Erasmi sint obscuraturi) . . . He has a wonderfully philosophical mind . . . Yet he is of such ability that fortune cannot fail to recognize such literature.”² Erasmus also proclaimed him (Vives) “a great philosopher and a savant of incomparable powers as a speaker and a writer. He knew no one with whom he could compare Vives for his powers of expression.”³ Assuredly there can be no hesitancy in declaring Vives a man of letters when his contemporaries speak of him in such terms. The later educators, who extol Erasmus and his views, fail utterly to mention Vives, of whom Erasmus, himself says, “He is one of the

1 Ibidem.

2 Ibidem, p. 441.

3 McCormick, P. J. History of Education, p. 196.

number of those, who will overshadow the name of Erasmus.”¹

No century, from the time of Vives until the present, failed to produce a prominent man, who appreciated the writings of Vives. Just as Petrarch, Dante and Boccaccio developed a keen appreciation of the writings of Cicero and Vergil from the extracts which they had read, so it seems that in the centuries following the Renaissance some men in their search for learning came upon a few of the writings of Vives and in them recognized his ability and erudition.

In the seventeenth century Andreas Schott speaks of Vives in these words: “Declamator egregius, philosophus magni nominis, multis in rebus eminentissimus.”² D. G. Morhof in the eighteenth century, after referring to the most notable works of Vives on education, says: “These are distinctly golden books, full of good fruit and they should be most diligently read by all learned men.”³ Greater recognition than that of Morhof was bestowed by Gregory Majanus, to whom we are indebted for the publication of the collected works of Vives.⁴

During practically the whole of the nineteenth century Vives and his “distinctly golden books” were unknown or unread. Toward the end of this century Frederick Kayser, Rudolf Heine and Jacob Wychgram wrote of Vives in German and translated his educational treatise *De Tradendis Disciplinis*. In the same century, some educator writing of him in English says: “He founded no school, but the influence of his powerful mind has been clearly felt, although not always

¹ Supra 2.

² Schott Andreas, *Hispaniae Illustratae*. Vol. II, p. 813, 1603.

³ Morhof D. G.—*Polyhistor*. Book III, Chapter II, p. 366. Edited by Johanne Mollero. Lubecae, 1708.

⁴ The Majansius Edition appeared in 1782-90.

recognized by those who have profited by his writings."¹

In the twentieth century Foster Watson in his "*Vives on Education*" and "*Vives and the Renaissance Education of Women*," brought out in English the educational works of Vives.

Though known as it seems to a restricted number, Vives has lived through his works during the centuries which have passed since his death. Some writers, without giving credit to Vives, made generous use of his writings. In the work of Ben Jonson, entitled "*The Timber or Discoveries*," published in 1641, not only sentences but even whole paragraphs are free translations from one or another of the contributions of Vives. One illustration will show this. "In all speech, words and sense are as the body and soul. The sense is, as the life and soul of language without which all words are dead."² This is the text of Vives: "In sermone omni sunt verba et sensa tamquam corpus et animus. Sensa enim mens sunt et quasi vita verborum . . . Inanis ac mortua res sunt verba sensu amoto."³ Roger Ascham is praised for the importance he gave to the use of the double translation. (Latin into English and the English back into Latin.) His view is expressed in his noted work "*The Scholemaster*," published in 1570. "Translation, is easie in the beginning for the scholer, and bringeth all (so) moch learning and great judgement to the Master. It is most common, for all your constructions in Grammar scholes, be nothing els but translations; but because they be not double translations, as I do require, they

¹ Barnard's American Journal of Education, Vol. XXVII, p. 351.

² Gifford, Wm.—Works of Ben Jonson, p. 757, London 1846.

³ Opera I, De Ratione Studii, p. 86. (Basel Edition 1555, to which references here are made).

bring forth but simple and single commodities.”¹ Vives in the *De Tradendis Disciplinis* published about forty years earlier, urged the use of the double translation. “Ergo postquam syntaxin didicerint, reddent vulgares orationes in Latinum et has vicissim in vulgarem sermonem.”² Roger Ascham is not the originator of the use of note books though he has often been proclaimed such. He speaks of them in his educational treatise: “Your scholer then, must have the third paper booke: in which, after he hath done his double translation, let him write, after this sort foure of these forenamed sixe, diligente marked out of everie lesson, viz., Propria, Translata, Synonyma, Diversa, Contraria, Phrases.”³ Vives regarded the employment of note books essential, as is clearly seen in his *De Ratione Studii Puerilis*, published in 1523. This was not merely theoretical, it was written for the Princess Mary whose education was directed by him. “Compones tibi librum chartae purae iustae magnitudinis, quem in certos locos ac velut nidos partieris: in uno eorum annotabis vocabula usus quotidiani, velut animi, corporis, . . . in altero vocabula rara exquisita; in alio idiomatica . . .; in alio sententias; in alio festive, in alio argute dicta; in alio proverbialia; in alio scriptorum difficiles locos,” etc.⁴

Credit is given to Francis Bacon for the introduction of a new method in the field of education. He states: “There are two ways of finding and arriving at truth: the one is to jump from particulars to remote and most general axioms and thus prove and make out their intermediate axioms according to the supposed

1 Ascham Roger, *The Scholemaster*, p. 189. Edited by Edw. Arber, Boston, 1898.

2 Opera, Vol. I, p. 469.

3 Ascham Roger, *The Scholemaster*, p. 69.

4 Opera, Vol. I, *De Ratione Studii Puerilis*, p. 8.

unshaken truth of the former. This has always been done to the present time . . . the other is to proceed from particulars to the lesser axioms, thence to the intermediate and lastly to the most general . . . In forming axioms we must invent a different form of induction.”¹ Vives employed this very method in the teaching of a language, viz., from letters to syllables, to words, to sentences.² Also in regard to instruction in the arts, he says: “In praeceptione artium multa experimenta colligimus, multorum usum observabimus, ut ex illis universales fiant regulae.”³ Comenius gives expression in his educational writings to ideas corresponding to those of Vives. If they are not identical, they are strikingly similar. “If we would ascertain how teaching and learning are to have good results,” says Comenius, “we must look to the known processes of Nature and Art. A man sows seed, and it comes up he knows not how, but in sowing it, he must attend to the requirements of Nature. Let us then look to Nature to find out how knowledge takes root in young minds.”⁴ Vives looks also to nature for his method of training the minds of the young. “Should the parents seek a method of education for their children, Nature herself speaks to us, and sacred learning teaches us by examples and precepts.”⁵ “*Semina sunt naturaliter menti nostrae indita velut stirpium ipsi terrae; ut nihil videatur aliud docens agere, quam quod sol, cum vi sua profert ex seminibus germina proditura alioqui per se, sed non tamen feliciter, nec tam cito.*”⁶

1 Bacon Lord, *Physical and Metaphysical Works*, including *Novum Organum*, p. 431. Edited by Joseph Devcy, London, 1894. George Bell and Sons.

2 Opera, Vol. I, *De Ratione Studii Puerilis*, p. 1.

3 Opera, Vol. I, *De Tradendis Disciplinis*, p. 461.

4 Comenius, John A., *The Great Didactic*, quoted from *Educational Reformers*, R. Quick, p. 136, N. Y., 1899.

5 Opera, Vol. I, *De Tradendis Disciplinis*, p. 453.

6 Opera, Vol. II, *De Anima et Vita*, p. 529.

Not one of these men, Ascham, Bacon, Comenius or Jonson acknowledged their indebtedness to Vives. That the three distinguished educators were not acquainted with the "distinctly golden books" of Vives, seems improbable. As these men were and are honored, Juan Luis Vives, who preceded them in the declaration of the very principles that made them famous, should be equally honored.

We have already seen that Ben Jonson helped himself generously to the productions of Vives. It now seems that his contemporary, Wm. Shakespeare, saw also in that same collection valuable material. In two of his plays there appear thoughts identical with and phrasiology similar to that of Vives. In a short treatise, "*Fabula de Homine*," Vives described at length the world converted, as it were, into a vast amphitheatre on the occasion of the birthday of Juno. For Vives the world was a stage in a literal sense. Shakespeare used this in a metaphorical sense, "All the world's a stage and all the men and women merely players."¹ The second comparison that evidenced an interesting similarity, was the story of Philippe le Bon, Duke of Burgundy, and a drunken man, with the "*Induction of the Taming of the Shrew*." Though these similarities are striking and significant, too much must not be concluded from them, is the opinion of Foster Watson who made these comparisons.²

The ideas on education as expressed by Vives were especially important and far in advance of those of his day. Had he received the recognition he deserved, he would undoubtedly have been a leader in education not only during the Renaissance but also in modern times. Much of the ground which Vives had lost

1 As You Like It, Act II, Scene VII.

2 Watson, Foster, Shakespeare and Two "Stories of Vives. 19th Century and After. Monthly Review, Feb. 1919, Vol. 85, pp. 297-306.

through the usurpation of later educators, has been regained for him by the laborious work of Foster Watson. His translation into English of the chief educational writings of Vives has won for him no little attention and study. Watson's translation has made it possible for the English speaking world to read the books of Vives and to judge of the modern nature of his principles. So modern are many of them that he has been thought worthy of the title, "Father of Modern Empirical Psychology."

From these accounts it is evident that More and Erasmus regarded Vives as a scholar; that Schott, Morhof and Majanus esteemed his writings; that Kayser, Heine and Wychgram in Germany and Watson in England valued highly his educational work "*De Tradendis Disciplinis*." It seems likely that Ascham, Bacon, and Jonson were acquainted with the productions of Vives and that they borrowed from them. Comenius was certainly familiar with some of them because he makes references to them in certain instances. The conclusion is that Vives was recognized as an educator in every century by those who were familiar with his writings.

PART II. A SKETCH OF HIS LIFE

Valentia was the birthplace of Juan Luis Vives. This city in Spain was remarkable for its open-mindedness and friendly attitude toward progressive movements. In this receptive and active environment Vives was born in the same year in which Columbus discovered America. As he died in 1540 Vives lived during the supremacy of classical culture in the North.

Though his parents were of noble lineage, they were poor. The first formal training which Vives received was under the guidance and direction of Amiguet, a

man, who was opposed to the then rapidly spreading spirit. So strong was his influence upon Vives that, when only sixteen years of age, this young man wrote a treatise in which he attacked the humanistic movement. Besides receiving his preliminary training at Valentia Vives pursued there the study of law. He enjoyed this particular subject, but not sufficiently to make it his life's work. Though he taught it, he did not practice it to any great extent.

His ardent desire for higher education led him to Paris, where at the University Vives studied letters and philosophy. The traditional teaching was accepted as satisfactory at the beginning of his course, but did not continue to interest him. His attitude changed and he became an enthusiastic supporter of humanism. He made Bruges his home in the North, where a group of Spanish people were living. There in Belgium he found a sort of replica of his native city. The Vives who left Paris was not the Vives who had entered it six years before. The aggressive adversary of the new spirit had become its defender.

Louvain had already been recognized as a great center of learning and to it Vives was naturally drawn. Events vitally important to him took place during the years that he dwelt in this intellectual atmosphere. He lectured at the University and tutored William of Croy, later Cardinal Archbishop of Toledo. It is believed that he owed his tutorship to Erasmus whom he met at Louvain. Though thus engaged in the twofold capacity of tutor and lecturer, Vives wrote during this time, the "*Declamationes*" of which Erasmus said "They were written in his best style."¹ This publication, political in its scope, was produced for the

¹ Barnard's American Journal of Education, XXVII, p. 340.

special assistance of the Cardinal Archbishop, who, however, died very unexpectedly.

Vives was now weakened in body by his assiduous labors and perplexed in mind because of this sudden death, which, because it meant the loss of his revenue, reduced him to poverty. Soon after he was taken to Bruges, where in the home of friends he received the medical care and attention which he greatly needed. But after a comparatively brief period there, Vives began to seek a patron, and in this pursuit, through Cardinal Wolsey, he endeavored to interest King Henry VIII. In this, however, he was not successful, but later he won the approval of the Court of England by the dedication of his "*De Institutione Christianae Feminae*" to Queen Catherine. This royal personage was a Spaniard, born in the native city of Vives. The regal prestige thus gained and his reputation as a scholar won for him a professorship at Oxford, and he was also selected to direct the education of the Princess Mary. It was for her special training that he wrote the "*De Ratione Studii Puerilis*."

Many circumstances contributed to the respected and honored friendship of England's Queen and her countryman. Consequently the Queen chose Vives as her counsellor and intrusted to him the secret troubles of her domestic life; but Vives, depicting the model husband, wrote the "*De Officio Mariti*," a treatise which aroused the wrath of the King, and brought about the subsequent imprisonment of its author. After six weeks, however, he obtained his release by promising to leave England.

The pension from the King naturally ceased and that from the Queen a little later when Vives refused to return to England and to be her advocate at the trial. The refusal on the part of her countryman was not

strange, since he knew that the trial was held, not that justice might be done, but that it might seem to be done. He was now broken in spirit and diseased in body, but in spite of this he overcame almost insurmountable obstacles and continued to write treatises that equalled his best. These strenuous labors were burdens too heavy for his frail body, and so his weakened condition led to complications which caused his death in 1540.

In addition to the writings of Vives already referred to, his chief educational works include: *De Disciplinis*; *De Ratione Studii*; *De Initio, Sectis et Laudibus Philosophiae*; and *Introductio ad Sapientiam*.

As a clear conception of the educational principles of Vives cannot be attained without some understanding of his appreciation of the external and internal senses and of the functions of some of the intellectual faculties, a review of them will be given in the second chapter.

CHAPTER II.

THE SENSES AND INTELLECTUAL FACULTIES

PART I. THE EXTERNAL SENSES

The account and description of the senses, which are given in the first part of this chapter, are indicative both of the complete knowledge which Vives had of them and of the great importance which he attached to them—an importance granted them because of their immediate contributions to the bodily welfare and because of their value as instruments in a system of education. This chapter includes a consideration of the external senses and their operations. Under this title Vives speaks of sensation; deals with the question as to whether the senses emit or receive something in their operations; explains their distribution and the close kinship of some of them; considers these two problems; viz., whether the senses can err or not, and whether the mind can be deceived by the representations of the senses; and finally he gives an account of the senses individually.

Vives tells us that the perfect animal has been endowed by God with five senses, sight, hearing, touch, taste and smell. The purpose of these is to acquaint the animal to a certain degree with the many and varied corporeal objects with which it comes in contact. They make it possible for the animal to select the salutary and reject the harmful in its search for food, and as all external objects come within this scope there is no reason for more nor less than five senses. The senses may be regarded, according to Vives, as the organs

and instruments of feeling (*sentiendi*) or the receptacles of sensations (*sensionum*). In a sensation a distinction must be made between the power of feeling or discerning and the organ by which this act is executed. The object which comes within the range of the senses and to which one or another of the senses responds is called a sensible object (*sensile*). For a sensation there must be some union between the sense and the sense object. This union, Vives informs us, takes place in various ways. In all instances, however, a suitable medium is indispensable. Vives exemplifies his idea by telling us that this medium plays the same part as cartilage does in joining the bone to the flesh. As the sense and sense object are both to be reckoned with in any activity of the senses, the medium must answer the demands of both, v.g., in case of hearing or seeing there is need of air or water. The value of a medium lies in this, that the sense can be acted upon by an object at some distance. That a sensation be normally carried on there must exist a distance suitable to the sense, sense-object and nature of the medium.

Vives sees a certain proportion and similarity among the four elements: earth, air, water, fire, and the five senses which enable us to perceive individual objects: "The earth and touch, water and taste, fire and smell, air and hearing, fire and sight."¹ When Vives speaks of the physical nature of the eye he uses the word "aqueus," watery; when he refers to the active power of the eye he uses the term "igneus," fiery. He holds that those things are the better perceived, which are in accord with these natures. In spite of the fact that certain sense objects, as motion, size, number, figure and form, are common to two or more of the senses,

1 Opera, Vol. II, De Anima et Vita, p. 503.

the objects upon which the senses operate form the basis of the distinction of the senses.

The truly and genuinely sensible objects are those whose substances are discerned through their own accidents (*inhærentia*) and also by another sense which is rather of the mind than of the senses.

Vives states that the question, whether in the operation of the senses, particles (*species*) come from the sensible object to the senses or not, is an unimportant one. He adds, however, that if the form and construction of the senses be considered, they may be regarded as the receptacles of these things which come upon them from without. The senses draw rather than emit. To substantiate this statement, attention is called by Vives to the hollow or concave form of all the sense organs (*forma ipsa organorum omnium cava*). The operation of the mind and that of the senses is similar. The mind certainly does not emit anything in its activities; quite the contrary, it draws something to itself. If emission of some kind, Vives contends, were essential in the operation of the senses, viz., if expectorating constituted tasting; exhaling, smelling; shedding tears, seeing; then because of the constant action of the senses, the living being would be rapidly worn out. On the contrary, if the senses act in the capacity of receptacles, the danger of weariness is greatly lessened and the task of anabolism immeasurably lightened. It is commonly held that the senses are of a receptive nature. Vives says, "And this I see sufficiently agrees with that which nature herself teaches both by the constitution of the '*sensorii*' and the '*actionibus sentiendi*.'" ¹

It is then asserted by Vives that something from the sensible object enters the senses, v.g., smoke enters the

1 Ibidem, p. 508.

nose, flavor the palate, light the eyes. In regard to the eye, there seems no doubt that these (species) extend to the pupil of the eye, as upon a mirror. The rapidity with which that something comes from the object to the eye is amazing. When, however, the quality and power of each element concerned are considered, this phenomenon becomes less startling.

Before giving a specific account of each of the senses, Vives speaks of their distribution and the close kinship that exists among some of them. To all animals, he says, the power of touch and taste which are necessary for preservation have been given. The office of taste is to discern the useful nutriment, while that of touch is of a protective nature, and for that reason is not located in any particular place in the body as the other senses are, but is diffused throughout the entire body. The sense of smell is an aid to taste which it antecedes. Sight and touch are closely allied. The latter acts as the corrector, a fact clearly evident in regard to the sensible objects which are common to both, i.e., "In a picture the eye seems to behold something protruding, touch is employed and the error corrected."¹ The error, however, is only rectified provided it is due to the eye and not to the mind. The question as to whether the senses can err or not is an old one. Vives believes that the senses cannot be deceived. "*Sed mihi non videntur sensus posse falli, et si possunt fallere.*"² Deception results, according to Vives, from a misapprehension of the true for the false and vice versa. Now the true and the false are not simple elements; they involve not infrequently composition and division, provinces outside the domain of the senses. The work of these is very definite. They simply per-

¹ Ibidem.

² Ibidem.

ceive their own particular objects without stating that they are such or not such. The senses merely receive an impression of an image, as wax that of a ring.

There is some doubt, however, as to whether the mind can be deceived by the representations of the senses. The question is handled in a very logical manner by Vives. The requirements, he says, for a sensation are a sense, a sense object and a medium. Difficulties may arise in the case of each element, which would be accountable for some error or other; the sense may be affected as in the case of near-sightedness; the object may be too far away, or disturbed or suddenly presented; the medium may not be sufficiently constant, as smoke, cloud, water or air. If all three factors above mentioned are in normal condition, the sense healthy, the sensible object suitable, the medium appropriate as to time and place, an attentive mind will in no way be deceived. "*Ut quae integram sequuntur naturam minimum aberrant.*"¹ The attention of the mind is indispensable. If it is not attentive an incorrect decision may result in spite of the correctness of the work done by the senses. "As when a messenger reports the truth to one not listening."²

The treatise on the senses individually considered begins with sight. The first place is assigned by Vives to it, because sight is most simple and most noted. He believes that sight is most noted because the work of the other senses is often attributed to it as well as that of the mind, viz., "*Videsne, inquit omnes, quam suave pomum, quod grave aes, quam dulcis concentus, quam teter atque aversandus ut acute confectum est argumentum?*"³ Vives considers it most noted be-

1 Ibidem, p. 509.

2 Ibidem.

3 Ibidem, p. 503.

cause of its location; because the invention and establishment of almost all branches of knowledge and of the arts are attributed to it; because light, color, size, figure, position and motion of bodies near at hand and at a reasonable distance are within its scope.

Viewed exteriorly the eyes are the sense of sight; interiorly there are two nerves which extend from the cerebrum to the eyes. Seeing then, Vives holds, is the result of the union of the exterior light with that of the eyes just as understanding results from the union of spiritual light with that of the mind. Some form of light is necessary in order to see and this must be such in quantity as to harmonize with the strength and powers of the eyes,—too little light will not suffice, too much is blinding. In themselves the eyes have no color. If they had any particular color, all things would appear to be of that same color.

Light and color are treated by Vives in connection with sight. Throughout the whole world, Vives tells us, light is diffused by the Author of all things; the spiritual light upon the spiritual, corporeal upon the corporeal. “*Spirituallem in spiritualia, corporalem vero in ea quae essent corporata.*”¹ The spiritual light of God is in the angels; the corporal is in the sun. Light produces a different effect dependent upon the nature of the object upon which it shines. If the substance of the object is thin, as glass, air or water, the light makes them transparent; if the substance is dense and impenetrable by the light, the result is a weak light on the outermost surface, called color.

The effect of different positions of the light relative to the object is thus analyzed by Vives: If there is a light between the visible object and the eye, while there is no light upon the object, shadows are the result; a

1 Ibidem, p. 503.

light about the object to be seen makes it readily visible; a light carried at night by an individual makes him at once visible to those whom he does not see. Since light is indispensable for seeing, it naturally follows that objects which share in a greater amount of light are more easily discerned in darkness, v.g., a burning coal, snow, gold, silver. In the day time the bright light of the sun robs them of their light, as it were. The chief visible thing is light. Light operates according to a process of radiation in the form of a pyramid, the basis of which is the visible object and the terminus ad quem of the cone is the pupil of the eye.

Accuracy in vision, according to Vives, is impaired by the disturbance: first, of the sensible object which interferes with the proper focusing of the lines of the cone upon the center of the pupil; second, of the air between the eye and the sensible object; third, of the denser medium, such as water or glass. In order to rectify a physical defect in the eye such as near-sightedness, a special glass is necessary, the purpose of which is to magnify the visible object. When people wish to observe very closely, they not infrequently contract the cheek, for in doing this the power of the eye is more centralized and the image compressed within a smaller space. The result is a greater and more stable impression upon the sense.

“The first visible thing is light,” says Vives, “the second is color and the third is the beauty of the thing which is clothed with light or color.”¹ Thin air and liquid are believed to possess light only, yet inasmuch as they have not been tested (*spectatae*) one cannot easily say of what nature they are. Water and glass

1 Ibidem, p. 504.

being of a denser composition, yield a light which very closely resembles color.

The relation of light to color is treated in a detailed manner by Vives. The important points are that the weaker lights are called colors and that an understanding of light is necessary for an understanding of the nature of color. Color is dependent upon the amount of light. For example, white is the result of a very large quantity of light; black, the smallest amount, but both the white and the black admit of grades or shades. A mixture of these two, according to definite proportions, is accountable for the other colors, some of which are akin to white, some to black, and the rest to a color midway between the two. Thus colors become almost innumerable. Especially is this true when we consider the all but countless shades of each color. "*Declaratur hoc, quod in solo viridi milla est herba, milla arbor, quae non proprium quendam habeat viro- rum et suum ab aliis omnibus distinctum.*"¹

Hearing is given second place in the order of treatment by Vives. At the outset he advises us of its importance in the transfer of knowledge and acquaints us with the fact that because of this function it has been often called the sense of training.

The external sense (*sensorium*) is the ear together with the thick air in it and a sort of liquid substance. The inner sense consists of two nerves extending from the ears to the brain. Hearing, according to Vives, is brought about by the joining of the air forced by the striking together of two bodies and the auricular air. Those who maintain that there is air in the ear, say that it can be proved by holding the hand to the ear. When this is done a sound is audible and this sound is attributed to the motion of the air within the

1 Ibidem, p. 503.

ear. Vives is of the opinion that there is a thin, spongy fluid there, which is motionless and without sound. He accounts for the buzzing noise, which occurs when the hand is held over the ear, by stating that it is caused by the external air, enclosed between the windings of the ear and the sinus, seeking an outlet, "*Quemadmodum in retorta buccina.*"¹ As sound is inseparably connected with hearing, Vives includes that subject in his consideration of that sense. It is made by striking two bodies together, and this striking forces the air to the ear. To illustrate his meaning, Vives uses the simple example of the circles that are formed on a body of water, when a stone has been thrown into it. Sound is extended by means of similar circles in the air. As the circles on a body of water grow fainter and fainter as they expand, so the sound becomes weaker and duller. If these circles are broken before they reach the ear, the sound is imperfectly heard.

To produce sound, instruments of a hard and solid nature must be employed. Instruments made of light material having a broad and plain surface, provided the quality of hardness is present, are better for the production of sound than those with a rough surface. The former not only drive the air well but they also force it as a whole, viz., in clear cut circles and for long distances; the latter scatter the air, and thus produce a harsh and confused sound. If bodies are brought together gently, the slow moving air continually breaks its own circles and there is little or no audible sound. To produce the proper results there must be a stroke or a blow (*ictus*) and this executed with rapidity. The swiftness with which the blow is struck prevents the scattering of the air and the breaking of the circles and thus the sound is sustained.

1 Ibidem, p. 504.

On the subject of hearing in the water, Vives disagrees with those who maintain that fish hear sounds in the water. "*Quod mihi verum non videtur, necque enim pisces in aqua audiunt.*"¹ He does not deny that some fish hear outside of water, for in response to some sounds they manifest surprise, to others terror. In connection with this subject Vives makes this significant remark: "*Verum naturae arcana sunt, nobis incomprehensibilia.*"²

The echo, a phenomenon connected with sound, is not overlooked in this treatise. When two suitable bodies are brought together in accordance with the conditions mentioned above for the production of sound, and when the forced air is reflected back by a solid body, Vives informs us that there is a "*sonus reflexus sive reciprocus*, in Greek, *ἠ'χω*."³ The clearness and fullness of the echo depend upon the distance between the origin of the sounds and the reflecting body. When two bodies are struck together a number of times in rapid succession, the echo is heard of the last rather than of the first. Vives agrees with Aristotle in that forced air is always reflected and that there is always an echo which, however, is too delicate, perhaps, for us to perceive at times. Strong winds interfere greatly with hearing. They prevent the normal expansion of the circles, in the same way as waves on a body of water break the circles formed by throwing a stone into it.

The sense of touch is described fully by Vives. The four elements of nature with their qualities and special powers as well as the most simple, such as heat, cold, humid and dry are embodied in the very constitution of the natural body. Other qualities such as hard, soft,

1 Ibidem, p. 504.

2 Ibidem, p. 504.

3 Ibidem, p. 505.

rough, light and heavy, originate from them. Diffused throughout the nerves of the body, or those things which are in the place of nerves, there is a sense which responds to these qualities, called touch. This sense of touch responds to the nearness of an object, but less distinctly. The space between the sense of touch and the touchable object when in contact is occupied by the flesh. Through a certain communal arrangement of these senses (sensorium), there is a quickening of the nerve in which the power of touch resides when anything hot, or cold, or soft is placed upon the flesh.

It is generally accepted, according to Vives, that only the elementary qualities of an object can be detected through this sense. These qualities may give some indications as to whether the object is one to be sought or avoided. This sense is widely distributed so that the salutary and the injurious may be the more easily and readily recognized.

In man, it is believed that the sense of touch is greater in the tip of the fingers; not because the flesh is softest at this point, but rather, because of the temperature and especially the custom of touching developed in the fingers. With the tip of the fingers we test the elementary qualities and estimate them. This is as it should be, because if any injury should result from the examination of any substance, the effect would be very slight. It is also noted that the sense of touch operates more slowly than in the case of seeing or hearing. The latter activities are carried on without immediate contact with the object. Were it not so, the effect of an injurious object would be serious, so speedily are these delicate senses aroused.

In his comment on taste, Vives observes that there are many things which are not intended to nourish all

living beings. Some forms of plant life are essential for one species of animals, others for another. To detect the injurious and the healthy in their search for food, living beings are endowed with the sense of taste. That quality of substance which stimulates this sense in a pleasing or displeasing manner is called flavor. The true location of the sense of taste is at the root of the tongue, according to Vives.

The humor, called saliva, seems to be a medium for this sense. The saliva is without a special savor. It is not affected by a particular flavor if some other flavor predominates or if the tongue is in a dry or parched condition. In regard to the relation existing between flavor, heat and moisture, Vives expresses the following ideas. Flavor is the result of the separation of the moisture from the heat. Heat naturally reduces the amount of saliva so that the moisture of something savory is received more minutely. Substances of little moisture have a sharp taste, such as pepper or cinnamon. Food that has a great deal of moisture and little heat is insipid and watery. The most savory substances are those that have a mingling of either sugar or wine.

The sense of smell occupies the fifth and last place in this treatise of Vives. Living beings, he tells us, possess this sense that they may more readily detect danger. There are some substances so poisonous in their very nature, that were they even tasted, they would cause death. The sense of smell is a protection against such immediate danger. In time of sickness this sense is frequently adverse to useful odors. Education and custom, says Vives, has greatly distorted nature. The time was when nothing seemed sweeter than the odor of the harvest or of the green meadow. The natural odors yielded to the artificial ones in

his day, Vives tells us, and that musk, nard and water with the odor of flowers were sought. It is not surprising to note that as dry and cold things are without taste, they are also devoid of odor. The sense of smell is superior to that of taste when the hot and the dry are in question. Warm evaporation has its own characteristic quality of sharpness, as in spices.

The treatise of Vives on the external senses shows his interpretation of their functions. Because of the simplicity of their activities he treated them first and the internal senses second.

PART II. THE INTERNAL SENSES

The aim in this section is to set forth the view Vives had concerning the internal senses. It includes a brief account of the senses which exist both in the minds of men and beasts, viz., the imagination, phantasia, memory, and the appreciative sense (*extimatrix*).

According to Vives the imagination receives images through the instrumentality of the senses. He tells us that what the eyes are to the body the act of the imaginative faculty is to the mind. The imagination is very intimately allied with the body and because of this, responds readily to what the senses present. On account of this close relationship, the imagination awakens and enlivens specific powers in the body. What is, therefore, imprinted on the one reacts on the other. The body in the role of a subordinate receives the command, as it were, and obeys the imagination.

The phantasia is a faculty rapid and unrestrained in its activity. Whatever appeals to it, that the faculty pictures and repictures, combines and separates. The phantasia unites what seems most opposed in nature and separates what is most harmoniously united.

From this it is clear, Vives points out, that the phantasia requires direction and control. Reason in man is the controlling agent that prevents the havoc which would otherwise result. It is a common thing for men to arouse the phantasia and mind of others by words, nods, gestures and signs, all of which are meaningless to beasts. Spiritual beings are able to arouse our phantasia provided the imaginative faculty has been previously acted upon by them.

Vives tells us that by many the imagination and phantasia are confused. They call the imagination, the phantasia and vice versa, as if the terms were interchangeable and the function one and the same. He continues by stating that it seems more suitable from the viewpoint of the faculty, and certainly more convenient for the purpose of teaching, to separate them. The action of the imagination is of a passive nature while that of the phantasia is active. These actions are regarded as distinct and so the faculties are thus distinguished. He concludes the little discussion by the following remark: "*Tametsi nihil erit quandoque periculi, si istis utamur promiscue.*"¹

The memory is described by Vives in these words: "*Velut orificium quoddam vasis.*"² The office of this faculty is to retain that which has been intrusted to it.

The extimatrix or appreciative faculty enjoys the power of judgment in regard to the sensible species, a judgment where the question of welfare is involved. The first step is the consideration of the thing in itself. The second step is the consideration of the constructive or destructive character of the thing. In the first instance the mind acts according to the object provided by the senses, viz., that which is presented by

¹ Ibidem, p. 509.

² Ibidem, p. 509.

sight. In the second it responds naturally to some stimulus, viz., to fear or admiration.

Vives sees a certain analogy between the exterior senses and the interior faculties. The former are of matter, of the earth; the latter possess images of subtle and spiritual things. External images of objects are impressed upon the eye, internal images upon the imagination. The latter preserves the image longer and offers it more purely and distinctly to the eye of the mind.

Nature has assigned, according to Vives, diverse positions in various parts of the cerebrum to these faculties; in the anterior cerebrum is located the fountain and seat of the senses, and there too the imagination is established; in the middle is the phantasia and appreciative faculty; in the occipital is the memory. An injury or defect in one part of the cerebrum will affect the function of the faculty which is located there. The same experience is encountered in our physical limbs. "*Pede enim laeso ambulare non valemus, quoniam et si ingrediendi principium et vis in animo, in pede tamen est instrumentum et fabrica.*"¹

The beasts possess these external and internal senses which we have treated and for them they are supreme. In man these senses are under the control of the intellect.

PART III. THE FUNCTIONS OF THE INTELLECTUAL FACULTIES

The consideration of the senses external and internal, as given by Vives, naturally prepares us for his view of the faculties of the soul. The will is merely mentioned here. The memory will be treated in connection with the educational practice of Vives. After a brief

¹ Ibidem, p. 510.

account of the intellect is given a few of the topics included by Vives under the heading of intellect will be reviewed. The aim is to select those subjects that will aid us in the consideration of his educational practice, viz., simple apprehension, composite apprehension, a method of learning, ideas (*notitiae*) and contemplation.

The three faculties, Vives tells us, are called the intellect, memory and will. Spiritual writers speak of these as a reflection of the Divine Trinity. Vives points out that a thorough study of these three faculties involves many difficulties and intricate obscurities. It is an easy matter to investigate the senses because the intellect, the superior faculty, can easily examine and judge the inferior. We possess no faculty above the intellect with which to scrutinize it. That we should be able to analyze the intellect is not essential; Vives maintains God has granted these faculties to us for our use not that we should have an exact notion of them. God knows them for He is their Author. It suffices for us to know that we are His workmen through them.

The intellect using the material both of the imagination and of the phantasia, rises to an understanding of things spiritual. The intellect within its dark walls cannot obtain an understanding of many things and is prevented from seeking knowledge which it desires. "*Sive essentiam rerum materia contactarum, sive qualitatem ingeniumque immaterialium nec posse per hanc corporis calignem acumine ac celeritate sua uti.*"¹

The intellect of man rises from the supreme and most excellent in nature to the Author of all things, says Vives. We see represented here the effects of original sin, the continual battle between the phantasia and the mind—the former tending downward to things

¹ Ibidem, p. 510.

corporeal, the latter tending upward to the celestial. The intellect ascends to those subjects which are neither comprehended by any sense nor by the phantasia. The duties of the intellect are summed up as follows: to record the past, to conjecture concerning the future, and to judge the true and the false, as well as the useful and the dangerous in the present. Vives tells us that "In this life man is endowed with an intellect, that is, with council, judgment, reason and this in one word is rational. This power is a free gift of God that we may know Him and thence love Him and through these means attain eternal happiness."¹

Simple apprehension, according to Vives, is that understanding of an object, which is obtained through the senses. He tells us that when something is presented to the mind (*animo*) if it is at hand, the imagination receives this image from the senses. If the object is not present, the phantasia takes back, as it were, the image from the memory, provided the object has fallen within the scope of the senses and has been impressed on the memory. If the object is not known through the senses, the intellect, indeed, by means of reason, declares that this thing exists or not, but the phantasia fashions an image for it from the things already known.

In the more complex apprehension, reason, Vives observes, has a part, and indicates that an object is such or not such, that it acts in this way or that way. Reason adds those things, which are known to the senses, called categories. The senses deal with the accidents, reason with the very substances.

Vives sees in the process of learning two aspects, the imparting of knowledge by the teacher and the receiving of it by the pupil. The mind is quickened by

1 Ibidem, p. 510.

teaching and hence a subject taught is more thoroughly mastered. Vives says, "Nothing contributes more to learning than teaching."¹

The seeds or germs of all mental activities are sown in the mind as the root of a tree is in the earth. Since this is so, the purpose of teaching is to accomplish just that which the sun effects in the vegetable world. The sun quickens and enriches the sprouting of the seed, an operation natural to it and which it would perform *per se*.

The purpose of our teaching is to have things done as we wish. If there were no teaching, many things might never be done, or done with great difficulty or done incorrectly. Animals have been so constituted that their activities come natural to them. Man requires exercise and direction to develop the implanted seeds. To accomplish this, learning must follow a well defined course.—"From the sense to the imagination, from this to the intellect."² No one could speak more forcibly concerning the importance of the senses in the learning process than Vives, who says "The senses are the first teachers."³ Sight is assigned first place by him in order of importance, that is, for the beginning. After some progress has been made it yields the first place to hearing. Vives then quotes from Aristotle and Plato on the subject. In regard to sight Aristotle says: "It lays open a large number of things to us and is the Author of the investigation of wisdom."⁴ Plato says: "Admiration is born of sight and from this arises consideration, investigation and study of wisdom."⁵ Hearing is called by Aristotle the sense of learning. Vives rejoices that God has

1 Ibidem, p. 529.

2 Ibidem, p. 530.

3 Ibidem, p. 530.

4 Ibidem, p. 530.

5 Ibidem, p. 530.

made the approach to learning so easy. "Man can be taught by the senses, by a fellow man or even by himself."¹ Some men, observes Vives, search into the very ultimate causes of things such as Aristotle and Galenus. Men who possess these wonderful powers seem to be impelled by some innate force, as it were, to achieve very great, almost heroic deeds. Their imagery is very exact, their observation keen and their judgment both of their own work and that of others correct. Since learning is so remarkably aided by communication, by hearing, it is most profitable to speak often and at length with men of this character. If there is no opportunity for speaking with them personally, their writings should be read with attention and thought. The writings of men of special ability are a great benefit to men of mediocre mental powers. While the latter will never be able to achieve deeds as great as the former, the influence of the excellence in qualities and in deeds of talented men will be most notable upon men less gifted. The ordinarily talented men entertain an inestimable admiration for men superior in intellect. To them they look for their models, for their inspiration.

The method of learning, according to Vives, begins with the simple and from that proceeds to those things which are connected with it, in other words we proceed from the particular to the universal. "In children," Vives says "it is to be noted that they first express separate parts of a particular thing and then join on or unite to them, v.g., they will call all flesh falcon (*capum*) or beef (*bubulam*), according as they hear either of these names mentioned first, once they have begun to speak."² While Vives states that the course of learning is from the particular to the uni-

1 Ibidem, p. 530.

2 Ibidem, p. 530.

versal, he does not neglect nor reject the deductive method.

Reflection and application of learning contribute generously to one's alertness and sharpness. "That only," says Vives, "is well known which has been diligently weighed in silence and which has been employed, v.g., in the practical or cultural arts."¹

Thus far Vives has spoken only of the internal factors in his learning process. The external factors are to him of the utmost value and importance, viz., the praeceptor, the pupil and the instruments. The teacher must naturally know his subject; that, however, is not all. There must be a clear explanation of the subject matter to which art and skill are joined. Another task of the teacher is to correct the pupil. This is as essential as a clear explanation of the precepts. A great service to the pupil is rendered when he is told why the professor approves of one thing and rejects another. The advantages to be gained from this phase of the work depend upon the soundness of judgment of the master. Under favorable conditions the most valuable results will accrue from this exercise. Tutored by a master of these abilities, a docile pupil will make rapid progress. It is the duty of the teacher also to note the progress of the pupil. For this purpose, Vives suggested not examinations as we understand them, but a comparison of the work of the pupil done today with that done at an earlier period, or with that of another pupil. "This," Vives declares, "shows clearly what has been acquired, what is lacking and what advancement has been made."²

Vives divides the pupils into that class which precedes the teacher and that which follows. The latter accepts what is proposed to them. They have intelli-

1 Ibidem, p. 530.

2 Ibidem, p. 531.

gence, but either through unwillingness or ignorance they carry on little or no investigation. If they do investigate, their results are those of a sluggish mind. Of the former some manifest reason and judgment, while others evidence a woeful lack of the power of conjecture. Since some matter is to be handed over to the pupil for the memory to keep in readiness, they labor in vain to become learned, Vives believes, unless they possess at least an ordinarily retentive memory. An aid to docility on the part of the pupil is close attention, careful observation and constant reflection upon particular things. Vives then gives the following quotations on the subject of learning: "A desire for learning is accountable for rapid progress,"¹ says Isocrates. "A great obstacle to learning is arrogance,"² says Bion. There are some individuals who think that they have learned all that is worth while, and of these Seneca writes, "I believe that many would attain great wisdom, if they did not think that they possessed it already."³

The subject of instruments receives an interesting consideration from Vives. The hand is the external instrument provided by Nature for the performance of the greatest part of the work allotted to man on this earth. "*Cui nullum potest omnino comparari, manum scilicet; de cuius aptitudine, commoditate, utilitate longum esset disserere.*"⁴ For the dumb the hands are the means of communication; in dealing with barbarous people, signs are made with them, even persons who understand each other's language use them in gestures. The value and use of the hands are greatly increased when guided by skill and learning. Vives

1 Ibidem, p. 531.

2 Ibidem, p. 531.

3 Ibidem, p. 531.

4 Ibidem, p. 531.

wonders if man would be able to accomplish the magnificent work he does with less suitable instruments. He asks whether the excellence of the work is due to the genius of man coupled with the skill attained by the constant use of these particular instruments or not.

The eye is then compared to the mind by Vives in the closing of this section. "Nothing is more similar to the mind than the eye of the body. Learning is to the mind what light is to the eyes."¹ As the mind is unable to think and investigate without learning, so the eye must have light to see and observe. As a strong bright light at first dazzles the eyes, and yet if they are healthy and well, they gradually become adjusted to it, while the weak and sickly eyes are oppressed and lose the power of discerning, so too, great and solid characters sustain erudition, while the small and fickle are overcome by it.

Vives, by a sort of a review or repetition, leads up to the study of concepts. The senses are the door of knowledge, are the first teachers. Through and from them the most simple knowledge, he says, is derived. However simple it is, it is the source from which all other knowledge is gathered. External things at hand come within the scope of the senses; things absent are the object of the imagination. Reason proceeds from the obvious and concrete to the hidden and abstract, from the particular to the general. Reason hands the material over to the intellect. Things, (*res*), Vives divides into two classes, the mutable and temporary, the immutable and perpetual. The latter are of such an elevated nature that they can only be considered with the help of supernatural light; such knowledge bears the name of wisdom. The former is subdivided into that class which is perpetual and constant in a mutable nature. As examples of this class, he gives

¹ Ibidem, p. 531.

us: "Coelestia: et in his sublunaribus quae naturalia sunt generi alicui, aut formae." If the knowledge is of an unstable, wavering nature, it is called a conjecture or an opinion. The same is true if the knowledge is gathered either from particulars or from universals, as long as it lacks a perpetual constancy. The word universal, as used here by Vives, admits of exceptions and variety. Some examples are: "Filium a matre diligere," "Huic morbo hanc aut illam herbam mederi." Rules and precepts are formed from the universals which serve as a basis for an art or a branch of knowledge (*disciplina*). The particulars are so exceedingly numerous that it is all but impossible to follow them. We are naturally endowed, Vives tells us, with a certain insight or understanding of phenomena of nature and through the power of reason we gather many other ideas. That branch of knowledge thus built up is called science. Vives refers to science as a light of a second nature, the splendor of which differs widely from that of the natural light. The former is increased by ingenuity, instruction, meditation and practice.

On the problem of intellectual development, Vives makes the following observations: that men are prevented from developing as they desire, because of the burdensome mass and slowness of the body; that the kind of knowledge and light which they employ depends upon their minds, not upon things; some individuals are blind to things most evident; others perceive the more obscure things very clearly because of their genius, natural or cultivated. "Quo plus ergo est lucis, plura scientiae: quo minus, plus dubitationis."¹ Darkness, according to Vives, mingled with light, is the cause of error. Pure light is not enjoyed by any one, while hampered by the body.

¹ Ibidem, p. 533.

Contemplation is the last of this series of subjects which we mentioned. The subject itself warrants the assignment of the place given to it. The function of reason for Vives is to investigate, of judgment to choose, of contemplation to inspect all things quietly and soundly which have been gathered by reason and approved by judgment. It is worthy of note that no reasoning is necessary when all things are certain and evident. As all delight springs from a certain proportion and harmony of objects with the faculties of the mind, nothing is more agreeable to the mind than truth.

The most certain and refined truths furnish the greatest satisfaction to the mind. An increase of this satisfaction is obtained when there is an understanding of the origin and first causes of these same truths. Everyone, Vives maintains, who is awake and active, attends, when these words are spoken: "I will relate to you the cause of this thing." To wish to know the causes of things is a part of our very nature. Contemplation affords the mind the greatest delight. In this both truth and character (*ingenium*) are weighed. Generous souls experience untold pleasure in contemplation, once the practice has been adopted. Many gentiles renounced all human things for this pleasure alone. The contemplation in heaven will be the most blessed of all, for God is the subject of contemplation there, than Whom no being is greater or more excellent.

CHAPTER III

THE EDUCATIONAL PSYCHOLOGY OF VIVES—AN ANTICIPATION OF MODERN THEORY AND PRACTICE.

The brief review of the functions of the intellect and those topics treated by Vives under that subject, as given in the preceding chapter, prepares us for the consideration of the evidence which is to show that Vives employed the main educational principles and factors prominent in the nineteenth century. The educators selected to represent that century are Pestalozzi, Herbart and Froebel. These men regarded education as a development both in its aim and in its process, emphasized in their educational system the importance of mental differences, valued greatly the use of the senses, the inductive method, self-activity and gradation, and recognized the need of physical development. The doctrine of interest and apperception was especially stressed by Herbart, while Froebel looked upon play as an indispensable feature in the early training of children. To Pestalozzi the spirit of the school was a matter of great concern. Memory training and the association of ideas also featured prominently in the educational system of these psychologists. After the evidence has been submitted to show that these principles and factors were known to and used by Vives, a word will be said in this chapter concerning virtue, a subject stressed by the aforementioned educators. The advanced views of Vives on the question of examinations and what may be called the first step toward socializing the school work will also be briefly mentioned.

The process of education was development, according to Pestalozzi and Froebel. Pestalozzi's view can be clearly seen in the following statement: "A child is a being endowed with all the faculties of human nature, but none of them developed: a bud not yet opened. When the bud uncloses, every one of the leaves unfolds, not one remains behind. Such must be the process of education."¹ Vives manifests the same view, for he also speaks of the unfolding process. "*Semina sunt naturaliter menti nostrae indita, velut stirpium ipsi terrae.*"² For Froebel the process of education is development in that self-activity, namely, the exercise of the child's own powers is indispensable. Vives not only looked upon education as development in a general way but he actually followed the development of the child's powers in the presentation of suitable matter. "*Prima aetate exerceatur memoria, quae excolendo augetur.*"³ From these passages it is easy to see that Vives at all times had in mind the mental capacity and development of the child. He did not expect reasoning and judgment from a child at an age when the memory was the more easily developed, nor did he offer to them intellectual food of which they could not partake. He held that the memory should be exercised at an early period for this reason, "*Nam illa aetas laborem non sentit, quia non expendit.*"⁴ This period, Vives maintains, is not the one for reflection and for deep thought. It may be rightly called the memory period or stage. This being true, it is sacred to the memory. Attention should be given to it that its proper development may be secured.

1 Pestalozzi, J. H. *Letters on Early Education* to J. P. Greaves, Trans. from German Manuscript, p. 7, London, 1827.

2 Opera, Vol. II, *De Amina et Vita*, p. 529.

3 Opera, Vol. I, *De Disciplinis*, p. 468.

4 Opera, Vol. I, *De Disciplinis*, p. 468.

When we speak of the attitude of Vives toward memory and its development, it must not be concluded that he crowded it or that he proposed the mechanical use of it, i.e., the intrusting to the memory of matter which was beyond the understanding of the child. No such conclusion could be drawn, after even a cursory review of his treatise. In speaking of the acquisition of a vocabulary, a task in which the memory is greatly involved, Vives says, "*Ex dictionario . . . decerpit magister, quae quotidiano sint usui necessaria, quorum primordia erunt a levibus, quaeque aetas illa facile sustineat, utpote a lusionibus.*"¹

The aim of education as well as the process for Pestalozzi and Froebel was development. The former states, "The main object of the school should not be to teach but to develop. Every human being has a claim to a judicious development of his faculties by those to whom the care of his infancy is confided."² For the latter, the aim of education is this: "To be wise is the highest aim of man, is the most exalted achievement of human self-determination."³ Vives states the aim of education in these words: "*Declaretur ei literarum finem esse, ut sapientior fiat iuvenis, ac inde melior.*"⁴ The ideas of Froebel and Vives on the aim of education are strikingly similar, though the purpose of this wisdom may not exactly harmonize. All agree that education means a drawing out, a strengthening, but Vives goes further and states that this development is to lead to wisdom and consequently to a betterment of the individual. Froebel also states that it leads to wisdom, the very apex of achievement.

1 Ibidem, p. 475.

2 Pestalozzi, J. H. *Letters on Early Education* to J. P. Greaves, p. 143.

3 Froebel, F., *Education of Man*, p. 4, Hailman's Translation, New York, 1901.

4 *Opera*, Vol. I, *De Disciplinis*, p. 453.

Pestalozzi, speaking of the child asks, "What are his faculties as a rational and moral being?" What are the means for their perfection and the end held out to them as the highest object of their efforts by the Almighty Father of all?"¹ These words of Vives seem to be a direct answer to the question of Pestalozzi. "There are in the mind of each one seeds, viz., the beginnings and germs of all the arts and predispositions toward all branches of knowledge so that we are born with a capacity for all these. There is no art nor branch of knowledge of which our mind does not possess some specimen, albeit, crude and barren. That one is perfected to which instruction and practice are applied."²

In regard to mental differences Pestalozzi maintained that, while all children were entitled to an opportunity for developing their faculties, a distinction had to be made between those who were capable of the highest development and those who were not. It is a part of education to find out what children already possess, not as developed, but as undeveloped faculties, and what the children are qualified for. With the idea of education as development, Vives could not be an exponent of the theory that all children can be developed according to the same exercises and training. Rather he advised the relatives of the child to observe and consider what his capabilities were. The child, he argued, gives many signs or indications of them in his every day manner of living. Boys, who idle away their time and show no interest in nor ability for letters, ought not to be sent to academies. They should be assigned to work they can and will do. Others may be given an opportunity, "Qui propter acumen ingenii

¹ Pestalozzi, J. H. Letters on Early Education to J. P. Greaves, p. 88.

² Opera, Vol. II, De Anima et Vita, p. 523.

et bonitatem, apti erunt literis: hi post flexum aetatis, confirmato iam et rectis opinionibus de rebus parato et munito animo, mittantur bonis auibus ad academiam.”¹ He taught that the children should be tested, not it is true, according to the present methods, but for the same purpose. To ascertain the ability of the boy, he would have the pupil placed under observation for one or two months. The professors are urged by Vives to meet about four times a year to discuss among themselves the qualities and powers of the youth and to decide for what work he manifests the greatest adeptness. The estimation of a boy’s mind, according to Vives, should be based upon his sharpness in observing, capacity for comprehending and his power in comparing and judging.²

The existence of mental differences led Vives to various classifications of pupils. Some individuals possess a mind, he tells us, capable of grasping separate and isolated facts, but not of comprehending them as a whole in a connected and related manner. Others, while they understand things in a general way, do not really fathom, nor retain them because of the lack of reflection and deep thought.³ Vives sees a distinction between the action of the mind and its content. The action is twofold, intensive and extensive. On this basis he divides pupils into these classes; the first class possesses ability to concentrate; the second yields to distraction easily; the third enters upon a task enthusiastically, but wavers at the first encounter of difficulty; the fourth meets the obstacle squarely and perserveringly works at the problem. Vives also classifies minds as quick and accurate or slow and exact. The latter often think more deeply than the former,

1 Opera, Vol. I, De Disciplinis, p. 456.

2 Ibidem.

3 Ibidem.

and so in time surpass them. In addition to the aforementioned distinctions, he observes that some pupils can endure longer periods of concentration than others; that some require a longer period of relaxation than others; and that the physical condition exercises a great influence upon the mind.

From the viewpoint of mental material (or content) minds are likewise grouped by Vives. One individual shows efficiency in work performed with the hands, such as writing, printing, carpentering, anything in which the use of tools is required. For him such tools are a pleasure. Another abhors all this and devotes himself with zest to problems that demand reasoning. The third class comprises those who do well both with their hands and with their minds. Of the third class, Vives holds, there are very few. Pupils as a rule evidence a special ability for some particular phase of learning; one for poetry, another for history, another for oratory, another for science and even a particular science. Boys are classified according to the nature of the work they perform, as creative, productive or original and the non-creative, imitative or non-individualistic.¹

With this understanding of the mind Vives speaks authoritatively when he says that there are some boys, who are incapable of making much progress in learning. In accordance with this idea, an idea not without its supporters today, Vives would have a selection of the pupils made: those who are fit for learning and those who are not. He bewails the fact that there are more failures in the acquisition of true knowledge than in the work which requires cleverness and dexterity of hand. Those who manifest a notable lack of responsiveness to mental training ought to devote their

1 Ibidem, p. 458.

time, attention and energy to the manual arts and let those who are properly qualified and mentally equipped, pursue the higher intellectual careers. Vives holds firmly to this principle and severely reproaches professors or tutors who, for the salary paid them, retain pupils for whom such mental work is a sheer waste of time and of money.

Vives was familiar with the precocious mind and his treatment of it was the same as that of today. The mental side must be restrained and the physical side emphasized. Where there is the proper balance between the mental and physical at all stages, there is very little change in the powers of the mind.¹ Were this thought expressed in the terminology of today it would read something like this: In normal cases the intelligent quotient is constant within minor fluctuations.

It is clear, then, that Vives stresses the necessity of careful and constant vigilance of the young on the part of the parents, relatives, and teachers. It applies to play as well as to work and study, and its purpose is to select that career which is best suited to the pupil.

After this review of Vives' classifications of the pupils on the basis of the mind's action and content, of the changeableness due to disposition and temperament; of the constancy due to the proper balance between the mental and physical development; of the necessity of selecting work suitable to the pupil, the place of sense training in the educational system of the nineteenth century and that of Vives will be considered. The very core of Pestalozzi's method is object teaching. The object was to precede the word. As a matter of fact it was not so much the knowledge of a particular object that he sought to impart as it was

1 Ibidem, pp. 456-457.

practice in observation. This indicates that his aim was to develop the natural powers so that they would become alert and active and not to supply young minds with information either unintelligible or intelligible to them. Pestalozzi naturally stressed observation. "Sense impression of Nature is the only true foundation of human instruction because it is the only true foundation of human knowledge. All that follows is the result of this sense-impression, and the process of abstraction from it."¹ How clear it then is that the simplest, and easiest things which come within the range of the sense must always be the starting point, and from this the advancement must be gradual and thorough. Herbart and Froebel also emphasized sense training.

Vives considers the senses the door to learning. "*Hi sunt enim ad cognitionem omnem aditus.*"² He calls them the teachers, "*Primi magistri sunt sensus, in quorum domo est conclusa mens, e quibus princeps est visus.*"³ The practical aspect of this principle is seen in his educational system, for in the study of the arts he advises the judicious collection of many experiments and the observation of these performed by others. Observation is to be insisted upon not only in learning the arts but also in acquiring the correct use of words. "*Conabitur exprimere quae apud authores legerit, et quemadmodum alios audierit loquentes, quos putet eruditos esse, attente auscultatos, sic et loquetur ipsa, in pueris est imitatio.*"⁴

Vives and Pestalozzi agree on the first stages of child training. The latter proclaims that he found it important "To exercise the attention, observation and

1 Pestalozzi's Report of His Work, Readings in History of Education, p. 441, E. P. Cubberly, New York, 1920.

2 Opera, Vol. I, De Disciplinis, p. 486.

3 Opera, Vol. II, De Anima et Vita, p. 530.

4 Opera, Vol. I, De Ratione Studii Puerilis, p. 6.

memory first, so as to strengthen these faculties before calling into play the art of judging and reasoning.”¹ The former, as we have already mentioned, spoke of the exercise of memory at an early age and insisted upon observation and attention. “*Attentio enim memoriam confirmat.*”² The art of judging and reasoning come later and to a certain extent take the place of memory. It is the opinion of Vives that God substitutes the power of judgment in the older people for the power of memory possessed to a greater degree by the young.

The position allotted to sight by Vives, in early education especially, has already been noted. The importance of the sense of hearing has likewise been referred to in connection with the conversations of the learned. A place of distinction is given to this sense because much is to be learned from the experiences and knowledge of others. “*Auditus ad transfundendam ab aliis ad alios peritiam aptissimus, ideoque sensus disciplinae nominatur.*”³ We are told also that the pupil should listen attentively to the words of the learned as well as to the ideas which they express. The reason assigned is, that the pupil should be impressed with these facts, “*Norit sensum disciplinae esse auditum.*”⁴ and “*Audiendi sensus tum plura et majora tum celerius docet.*”⁵ The teacher is in a position to give to the pupil in a few moments a clear grasp of a topic which ordinarily requires a long time to find, to read and to master. This point is indicative of the value of a carefully worked out lecture for the auditors. The sense of hearing is trained when the pupil listens to

1 Pestalozzi's Own Account at Stanz, quoted from Educational Reformers, R. Quick, p. 332, New York, 1899.

2 Opera, Vol. II, De Anima et Vita, p. 518.

3 Ibidem, p. 508.

4 Opera, Vol. I, De Disciplinis, p. 467.

5 Opera, Vol. II, De Anima et Vita, p. 530.

the teacher reading aloud, an exercise stressed by Vives as an important feature in teaching a language, imperative in mastering pronunciation, and essential in acquiring a vocabulary. It is well to read aloud in the privacy of one's own room, if there is a desire to retain the matter pursued. Two senses are thus employed. Two avenues of approach to the mind are thus laid open. The senses are afforded a vast field for their activity in nature study. In fact progress in the subject depends upon the acumen of the senses. In the writings of Vives statements of this nature are found: "Observation begins through the eye;" "The study of nature which means clearly the use of the senses."¹ Personal observation which is necessary for a true and close study of nature should be coupled with recreation, since great pleasure comes to the keen observer of what nature offers. It is a school in which there is much to be learned. Nature is a schoolmaster, for it teaches, and the subject taught, is itself. Vives realizes that even the most diligent student will not be able to make a very complete study of nature, if he depends entirely on his own observations. A student is advised to read the principal books on the subject and to visit men, who are engaged in the various pursuits of country life. From them he can learn many things.² Turning from the general information essential in the art of medicine such as a knowledge of plants, animals and the human body, Vives says, "From this nature-knowledge arise two subjects founded on observation, Dietetics and Medicine proper."³

The inductive method was the common practice of Pestalozzi, Herbart and Froebel. A great deal of the data set forth by Vives as testimony of the value he

1 Opera, Vol. I, De Disciplinis, p. 446.

2 Ibidem, p. 487.

3 Ibidem, p. 500.

places upon the senses in education could be repeated in proof of his appreciation and use of the inductive method. It is sufficient to say, however, that the inductive method is based upon observation and experiment. To what has already been indirectly stated in behalf of the inductive method, further evidence of Vives's use of it will be added. There is need according to him of numerous personal experiments in the study of the arts, in order that some general conclusions may be drawn. The use of the inductive method is evident in his plan of teaching a language. He proceeds from letters to syllables, to words, to sentences.¹ Vives believed that syntax should be taught along with the perusal of an author. The rules according to this procedure were taught in conjunction with reading. He states specifically that one or two, at most three, examples are sufficient to illustrate a single construction; only after these are given is the rule formulated.² When reference is made to the subject of disputations by Vives, he says, "This kind of mental discipline calls for a pupil to be one, who is progressing and rising above the senses to causes and first principles, to a generalization toward the universal from the particular."³ These instances show that Vives employed induction in his teaching.

Self-activity was an emphasized principle in the nineteenth century. For Froebel the aim of education and the process was development. The process is development in that self-activity, namely, the exercise of the child's own powers is an indispensable factor.

To carry out this principle of self-activity, it was necessary to have recourse to play, especially in the early stage of school life. Froebel valued highly this

1 Opera, Vol. I, De Ratione Studii Puerilis, p. 1.

2 Ibidem, p. 4.

3 Opera, Vol. I, De Dipciplinis, p. 488.

phase of school activity and granted it an all important place in his kindergarten. Handwork occupied an equally important place in the practice of Froebel. This form of training was not original with him, for Pestalozzi had employed it in his experimental schools. With Pestalozzi it was a thing taught, something received by the student, while with Froebel it took on a constructive and creative aspect. Whatever was presented to the child must find expression in the actual working of the child; it was learning to do by doing. Vives was aware of the importance of self-activity. As soon as the pupil enrolled in school, we might say, self-activity was begun. The older students were urged to talk over their lessons and explain them to the younger ones. This was teaching in the true sense of the word on the part of the more mature pupils and hence the most commendable form of self-activity. Those who had entered the school later not only listened to their fellow-students, but spoke Latin, the language which they were studying, and so they too found an opportunity for self-activity. The pupils compiled their own vocabularies; had a series of note books in which they gathered notes from their reading; rendered short and easy passages into Latin, a task gradually made more difficult, employed the double translation. The directions given to the son of William Mountjoy on the subject of "Making Notes," will illustrate the use of this principle. "*Compones tibi librum chartae purae . . . quem in certos locos ac velut nidos partieris: in uno eorum annotabis vocabula usus quotidiani; in alio idiomata et formulas loquendi, in altero vocabula rara, exquisita; in alio sententias; in alio festive; in alio argute dicta; in alio proverbia, in alio scriptorum difficiles locos.*"¹ What

1 Opera, Vol. I, De Ratione Studii Puerilis, p. 8.

has previously been said in regard to the use of the senses in nature-study pertains to the subject of self-activity. In the pursuance of this course the pupil was advised to observe nature on his walks; to visit men engaged in agricultural work and learn from them; to enter shops and factories and there perceive objects in the process of construction. "*Artes omnes quae ad aliquid vel agendum vel faciendum pertinent, optime ex illorum actionibus atque operibus colliguntur, qui natura, studio, usu fuerunt instructissimi.*"¹ The presentation of the subject matter, according to Vives, should effect a mental development through the activity of the students. He holds that an auditor at a lecture takes matter into the mind, but there it remains until it has been reflected upon and mentally digested, as a load, just as the food in the stomach immediately after a meal.² Subject matter to become the tool of the pupil, demands mental self-activity.

Gradation is an important principle in education. At its root there lies that which might in all truth be called a fundamental element in the learning process, viz., that the subject matter be understood. If the acquisition of knowledge is a mere mechanical process, then gradation is valueless. This principle was proclaimed and employed by the promoters of education in the nineteenth century. It was the view of Pestalozzi that from the simplest elements instruction should be carried on step by step. Vives never regarded the minds of children as an open bin, a tool chest into which knowledge in all the varied types and forms could be promiscuously thrown. He pictured the minds of youth more like grinding mills that are adjusted to receive and grind only so much grain of a certain size at any one time. As it is futile to pour too coarse

¹ Opera, Vol. I, De Disciplinis, p. 461.

² Ibidem, p. 468.

grain into the mill, so it is equally absurd to present to the youths subject matter beyond their comprehension. In every phase of language teaching, rudiments, vocabulary, reading, speaking and writing, there is a gradual rise from the easy and simple to the more difficult and complex. The rise from the useful to the cultural harmonizes with the utilitarian mind of Vives. "*Itaque initio pauca et facilia objiciet, mox consuefaciet pluribus, majoribus solidis.*"¹ This is a general remark and applies to all subjects. In regard to the learning of a vocabulary, he says: "*Quorum primordia erunt a levibus, quaeque aetas illa facile sustineat, utpote a lusionibus, sensim majora procedetur de domo.*"² Though the speaking of Latin was the aim of the school of his day, the approach to it was from the vernacular, first the vernacular entirely, then a mixture of the two and finally Latin. When the pupil began to read privately, Vives insisted upon selections from the easier authors. The topics assigned for writing were in the beginning the easiest possible, topics well within the mental grasp of the pupil.

Physical exercise had its place in the curriculum of Pestalozzi that at all stages a symmetrical development might be brought about. It was also not neglected by Vives. His doctrine as applied to the various functions of the mind, viz., that each must be exercised in order to be developed, extended to the body as well. He realized that to have a sound mind, a sound body was necessary. Consequently he advocated frequent physical exercise for boys, who were in the growing stage. As he endeavored to determine a boy's mental status and to give him work according to his capacity, so too he taught that the same kind of physical exercise

1 Ibidem, p. 467.

2 Ibidem, p. 475.

ought not to be given to every boy nor to the same extent. Some students are robust, Vives remarks, and not only can stand, but actually demand strenuous exercise. Others are weak and undeveloped. These also need exercise, but exercise of a milder nature. Vives suggests that out of doors is naturally the proper place for physical development. When the weather prevents this order, a means should be provided whereby it can be taken on porches or in wide halls. As boys grow older, stronger, and accustomed to physical work, more laborious tasks are beneficial. Games are authorized. The proper aim, i.e., the promotion of physical health and strength is to be constantly stressed. Longer periods of time are required for games, brisk and vigorous walks, while those of shorter duration suffice for the vivification of judgment and enlivenment of the mind. Vives observes that pupils engaged in study become dull, the tasks more difficult, and that weariness results, if they are held to study too long.

Nourishment, according to Vives, is a vital issue in the question of health. It should be wholesome because of its bearing upon the mental and physical conditions of the student. Not all can partake of the same kind of food. Regulation according to the disposition of the individual is imperative. "*Exuetti humestantibus utantur, pituitiosi calidis et arefacientibus; melancholici; contrariis naturae illi quem extenuent spiritus ac hilariores reddant.*"¹ Vives maintained that the sharpness of the mind and the memory's power of retention can be impaired or benefited according to the nature of the nourishment of the pupil. Regularity in eating is a point of no mean significance. He condemns filth and dirt in regard to the body and also excessive care of the body. He proposes a golden mean, proper

¹ Opera, Vol. I, De Disciplinis, p. 472.

and adequate consideration for cleanliness, exercise, and nourishment. The purpose of it is that both mind and body may be in condition to function efficiently.

Interest was a most important principle in the educational system of Herbart and Froebel. The key, according to Herbart, to the interests already awakened in the youth is to be discovered by the teacher in the early associations with him. Once the pupil's interests are known, it becomes the duty of the instructor to begin with them as a basis and lead his charge to more numerous and wider interests. This Herbartian idea has been summed up in that famous expression: "Many-sidedness of interest." By interest Herbart means that mental feeling of hunger, that desire for more. Vives insisted that two or three illustrations be given previous to the formulation of a rule. These examples must not always be serious, he says, "*Ad-miscebuntur castae et purae aliquae fabellae, quae animum eius reficiant et redintegrent tum etiam excitent.*"¹ Grammar has generally been called a dry and uninteresting subject by boys. To offset this and to awaken interest, "*Quaeruntur tamen interdum amoena et dicenti et audienti diverticula, ut historia, vel fabula levandi taedii gratia fusius explicetur: quam in partim malim grammaticum peccare, quam ieiunitate quadam.*"² The acquisition of a vocabulary, a study of words, can become very monotonous and wearisome. Not only to prevent this, but especially to arouse enthusiasm and interest, Vives says, "Let the teachers spice these with witty remarks, lively stories, examples, pleasing narratives, proverbs, parables, terse instructive sayings, brief phrases, sometimes lively, sometimes grave."³ This doctrine found expression in the work

1 Opera, Vol. I, De Ratione Studii Puerilis, p. 4.

2 Opera, Vol. I, De Disciplinis, p. 467.

3 Ibidem, p. 476.

carried on among the pupils themselves. The interest of the older pupils was enlivened by the student-teaching method which formed a part of the system of Vives. The younger pupils' interest was kept aglow by the example of the more advanced fellow-students, and especially by the necessity of knowing Latin in order to talk. The Latin language was the language of the school and consequently the pupils strove to become proficient enough in it to speak it. The preservation of one's written work and its comparison from month to month enabled the pupil to evaluate and judge his own progress. This procedure was undoubtedly a factor, which contributed not a little to the stimulation of interest.

Vives spoke of the necessity of understanding the minds and the particular tendencies of the pupils, that work more suitable to them might be discovered and their interest sustained, for all like to do the things they can do best. It must not be concluded that there was no real work and that effort had no place. Every phase of the arts, practical and cultural, demands at some stage or other constant drill and intelligent effort. Yet if difficulties are being mastered and if some progress is perceptible, interest is present, though it may be at low ebb. If there is no interest, there is no willingness on the part of the pupil and of this Vives says, "Those do all things well and with wonderful happiness, who are by nature equipped for them. But when we drive unwilling minds to work uncongenial, we see that all generally turn out wrong and distorted."¹

In language study besides the means already mentioned for offsetting the dullness of the subject and enkindling interest, Vives used a multiple line of ap-

¹ Ibidem, p. 459.

proach. Some authors, he maintained, were to be read, analyzed and notes taken, i.e., read intensively, while others were to be read extensively. Vives employed the double translation, and saw the need of drill work in the rudiments and in learning a vocabulary. The memorizing of lines; the writing of a story, a letter, an essay; the turning of verse into prose and prose into verse were important features in the plan of Vives. The oral work of the pupil, i.e., conversation with other pupils or with the tutor was insisted upon. He advised the tutor to read aloud to the pupil and also explain the matter which was to be read privately by him. Some matter however was to be assigned to the pupil for his own interpretation.

Vives believed that the pupils must not be expected to attend continually and attempts to force this ought never to be made. On the contrary they must be given a few minutes for relaxation. This practice contributes greatly to the maintenance of interest.

The idea of emulation, through words of praise and rewards was advised by Vives, viz., a word of commendation of a pupil who did not do so well, in the presence of others, or a word of reproof.

The selection of subject-matter was never made without regard to the interest of the pupil. There are the "*Exercitationes*" dialogues dealing with subjects attractive to boys, such as: a group of children on their way to school; their return; their play, meals at school; journey on horseback; the young prince. Without seeming to labor because of the interest aroused by these dialogues a workable and practical vocabulary was acquired. When writing for his pupil, the Bishop of Cambrai, the matter chosen was that which was pertinent to his position and consequently interesting. The first "*Declamatio*" is represented as being given by Quintus Fundanus, who begs Sulla not to give up

the dictatorship. The purpose of these writings was to bring to the attention of the Bishop the technical words, legal, political and military idioms. These, Vives sought to bring to his pupil's attention not in long columns, as in a spelling lesson, or in beginning language books, but in an attractive manner. He presented the words, phrases and idioms in an impressive and acceptable form. In this he showed his firm belief in the principle of interest. No doubt this was in his mind, when he wrote the preface to the "*De Tradendis Disciplinis*." "Conatus sum scribere ea primum ita aperte ac dilucide, ut percipi facile ac teneri possent, quae dicerem. Tum ad naturam rerum, quoad praestare potui, congruenter; ut libeat ingenio cum delectatione aliqua illas cognoscere. Fructus quoque redeat ad discentes amplior." ¹

Apperception, so well set forth by Herbart, means that all new knowledge must be acquired by means of and through the old. To accomplish this the teacher should know what the child's experience has been and what his interests are. Vives insisted upon the observation of a child, by parents, friends and teachers, once he had entered school; and upon the meeting of professors to exchange views on the mental ability of the boy, that he might be directed in accordance with it and his experiences. He advised the observation of children at play, for it is there, Vives declares, that sharpness and character are disclosed. Especially is this true, if they are not aware of a spectator and are mingling with a group of their own age. Emulation, for Vives is another index of the mind. The nature of the response to this stimulus reveals the pupil's character at least to a certain extent. These suggestions, if adhered to, will give an insight into the dis-

1 Ibidem, p. 324.

position, tendencies and mental power of a boy. They will enable the observer to acquaint himself with the experience of the youth and to familiarize himself with his interests. With this foundation upon which to build, Vives would have the teacher begin his work. Once a boy takes up the study of Latin, the approach to it is the vernacular, that in which he has had experience. To equip the pupil with a vocabulary, Vives prepared the "*Exercitationes*." The words are the words with which he is familiar in the vernacular, viz., articles of clothing; dishes, vegetables, fruits, etc., such as are used at the table; games that he is accustomed to play; the topics of conversation are those which have and are still engaging the attention of the boy; the daily topic of rising in the morning, "*Surrectio*," "*Euntes ad Ludum, Literarum*"; "*Reditus Domum et Lusus Puerilis*." In this collection of Vives there are twenty-five boyish topics treated in a boy's way, topics within the experience of youth. When this is done, the reading of stories, fables, historical events and the like, is taken up. All these topics, Vives maintains, should be chosen according to the pupil's age and in keeping with the extent of his studies.

Vives attaches great importance to experience. He calls it, "The second part of practical wisdom, and tells us that it brings a very great mass of detail to the power of thinking, as one hand helps another."¹ That is precisely what apperception means using "the great mass of detail" in the interpretation of the new. In other words it is accepting nothing which is not associated and assimilated with former experiences. The word "experience" must not be restricted to one's own personal experience, according to Vives, because each individual can actually come in contact with few things in a life time. It must, therefore, include that

1 Ibidem, p. 505.

of others. The only requisite for this gain is that the experience of others be made one's own. Once possessed, the new can be assimilated by means of it. In the following remark, Vives seems to refer to apperception. "I feel that I have tarried a long time on the subject of language, but I did it because many children have been poorly taught at the outset. The manner in which things are handed down in the beginning is exceedingly important. All subsequent knowledge and learning spread forth their streams in various directions from these sources."¹

In the writings of Vives, no treatise is found corresponding to that of Herbart on apperception, as a mental process. The same ideas, it seems, are expressed in a disconnected manner in various parts of his treatises. The fact that Vives insisted on the subject-matter's being chosen in accordance with the pupil's age and studies, and on the teacher's knowledge of the pupil's experience and interests indicates an idea of apperception. These preliminaries seem to parallel the first of the formal steps of Herbart, viz., preparation. When Vives says that "Learning is to the mind what light is to the eyes,"² and that "The kind of knowledge and light, which men employ depends upon the mind, not upon the thing,"³ he implies an analysis of the presentations in the mind on the subject proposed, viz., the apperceptive process. When the mind of a pupil is compared to a grinding mill by Vives, he refers to the same processes, which are designated by concentration and association.⁴ When Vives says that an auditor at a lecture takes matter into the mind, but there it remains, until it has been re-

1 Ibidem, p. 481.

2 Supra, p. 33.

3 Opera, Vol. II, De Anima et Vita, p. 533.

4 Opera, Vol. I, De Disciplinis, p. 417.

flected upon and mentally digested, as a load, just as the food in the stomach immediately after a meal.¹ He expresses the same ideas as those contained in reflection and assimilation. Vives's idea of application is clear from the tasks imposed on pupils which required self-activity.

Play especially in the early stage of school life was highly valued by Froebel. To it he granted an important place in his kindergarten. The following contains the views of Vives on this subject. Through play the boy should be taught both to command and to rule. The games which require honor as well as skill, have the highest rank. While at play about the school, at least, Latin should be spoken. The words that are essential for the games should be carefully explained by the teacher, so that the pupils in using them may be confident that they are speaking correctly. Otherwise there is danger of destroying the whole-heartedness and freedom that should characterize the play. Games like javelin throwing, ball playing, jumping, etc., should, Vives says, be carried on in the presence of an older person. Indoor games are very essential. At times it is well to select those, which require the exercise of the mind, demand judgment and tax the memory, as for example, chess. Recreation may also be profitably spent in relating stories of a live, witty and pleasing nature. As mentioned in connection with nature-study, recreational walks afford an opportunity for the observation of the beauties of nature and its wonders.

The home, the first school, in which the controlling principle is love, teaches us, Pestalozzi holds, what should be the spirit of the school. Vives speaks as follows on the relation that should exist between

1 Supra, p. 48.

teacher and pupil. He rebukes those teachers who flatter their pupils and condone their faults, lest they go elsewhere and thus their fee be lost. He charges them that they should enter upon the teaching profession with a keen sense of the tremendous responsibility. With no less love or parental interest is a boy to be accepted for instruction than that which the father bears toward his son. The teacher is fittingly and logically regarded as the father of the boy's mind. Upon him is the pupil dependent for the proper guidance in the growth and development of that mind, the nobler and more God-like element in man. As love, respect and reverence are the factors of control in the home, so likewise are they to be enthroned in the school. The tutor ought to cherish a love for his pupil as if he were his own son and the pupil ought to foster a love for his tutor as the father of the mind. On this reciprocal affection, Vives says, "*Credibile non est quantopere affectus hi institutoris ac discipuli ad recte tum tradendum, tum percipiendum eruditionem val-eant.*"¹

Vives was most modern on the subject of the association of ideas. Sir Wm. Hamilton said, "His (Vives) observations comprise in brief, nearly all of principal moment that has been said upon this subject either before or since."² The following is a summary of his suggestions on memory:

"All men have not a memory equally good for all things. There are men who remember words easily; others, things. Hortensius belonged to the former class, Themistocles to the latter. It is to be noted that some men remember curious things; others, the upright and simple; others, things of public nature; others,

¹ Opera, Vol. I, De Disciplinis, p. 461.

² Hamilton, Sir. Wm. Collected Works of Thomas Reid, Vol. II, p. 896. Edinburgh, 1846—Foot-note.

private things; others, things ancient; others, the new; others the strange and peculiar; others, vices; others recollect the virtues more quickly and better, according to the proneness of each person is attention willingly given to these things or those. Those, to which attention is given, are remembered.”¹

“The natural temperament of the body has a great influence on the memory. The memory also receives notable support from the general plan of living; clothing, food, moderation in drink, exercise, rest, sleep.”²

“Those things are deeply impressed on the memory, which are attentively and carefully learned at the outset. The most clever men endowed with a good memory often times do not remember as many things as those, who are not their equal in these gifts, because they see, read and listen inattentively.”³

“An aroused passion associated with the first memory of anything makes the recollection of it easier, more prompt and more permanent. Events which enter the mind with great joy or sorrow are retained the longest. Because of this fact there was a custom among certain nations of whipping the boys severely who were present at the marking out of the boundaries of the fields that the boys might better remember the border lines.”⁴

The memory is greatly strengthened by frequent exercise and meditation. Not only are things present retained, but things varied in nature and absent are equally well grasped and retained through practice and reflection. There is no function of the mind which demands its cultivation in the same proportion.”⁵

1 Opera, Vol. II, De Anima et Vita, p. 518.

2 Ibidem.

3 Ibidem.

4 Ibidem, p. 519.

5 Opera, Vol. II, De Anima et Vita, p. 519.

“That which we receive with an open and tranquil mind, clings easily to the mind, provided, of course, we attend. For this reason stories heard and poems learned in early childhood are remembered longer and more accurately. The mind at that period is free from care and unburdened by thoughts.”¹

“In childhood we attend diligently because all things are new. On account of our admiration for the new, we view carefully what is presented and thus a deep impression is made.”²

These suggestions cannot fail to impress one with the clear insight which their author had of the working of the mind. He was true to his own contention that we should take all that the ancients had bequeathed to us and to that we should add the results of our own observation, experiments and study. The achievement of Vives on this subject is such that before his time and up to the middle of the nineteenth century, nothing better was contributed to his conclusions. This is the opinion of Sir William Hamilton written in 1846.³ The remark is particularly striking because this late date would include the contributions of Pestalozzi, Herbart and Froebel. The last of the triumvirate died just six years later.

Vives was of the opinion that the memory was situated in the back part of the head and that it possessed two functions; to apprehend and to retain. “*Memoriae, sicuti manus, duae sunt vires, apprehendere et retinere.*”⁴ He enumerates a number of ways by which the memory might be strengthened. The attitude of mind is a great aid to memory in that we perceive easily that which we wish, more quickly grasp it and

1 Ibidem.

2 Ibidem, p. 520.

3 See above—p. 58.

4 Opera, Vol. II, De Anima et Vita, p. 518.

more faithfully recall it. Vives proposes that it is a great aid to memory to support with reasons that which is to be learned. The matter which has been frequently and carefully intrusted to the memory will be retained intact. Writing down that which one wishes to retain makes a deeper and more permanent impression. Under normal conditions that which is confided to the memory just before retiring is reproduced more clearly on awakening than matter presented to it at some other period of the day.¹

As the waves caused by a stone thrown into the water are scarcely visible in ruffled waters, so, when the cerebrum is greatly disturbed, as in disease, impressions on the memory are not of a durable nature. When people grow old and the humors become cold and hard in the "Occipitium," they remember with difficulty. Men who possess quick and alert minds comprehend readily, but do not retain very exactly or for a long period the matter memorized. Minds, slow in apprehending, retain better.

The character of the mind is ascertained from the rate at which it masters figures. A sharp mind reckons rapidly, a dull one, slowly.

A regular series or chain of thoughts is developed through the suggestion which one thought makes of another. Vives speaks of them as grades or steps and gives the following illustration: "From ring to silver-smith; from him to the collar of the queen, thence to war waged by her husband, from war to the leaders; from these to their children or ancestors, then to the branches of studies which they were taught."² This chain of events or ideas assumes a different nature in accordance with the subject pursued and the aim one has in studying it. "One may proceed from cause to

1 Opera, Vol. I, De Disciplinis, pp. 459, 467, 468.

2 Opera, Vol. II, De Anima et Vita, p. 519.

effect; from effect to the means; from the part to the whole; from the whole to place, from place to person; from person to things prior or later, contrary or similar.”¹ When several events are to be remembered, it is necessary to unite them in some way or other. If this is done, then the thought of one brings back the others, i.e., at the sight of a place there comes the thought of what happened there. That which is orderly, precise and definite, such as formulae in mathematics, is easily accepted by the memory. Poetry also can readily be made the property of the memory because of the nature of its composition. Recollections are natural and involuntary when one thought yields to another in stream-like fashion. They are forced when a person tries to recall a certain definite event.

After giving his rules for the association of ideas and his suggestions which are an aid to memory, Vives gives four reasons for forgetfulness: first, the image impressed upon the memory is entirely blotted out: second, the image is besmeared and broken: third, the image escapes the person seeking it: fourth, the image is hidden, covered with a veil, as it were. When the first occurs the matter has to be entirely renewed. In the second and third instances a repetition is required. At the occurrence of the fourth a recovery is needed, as in the case of the health of body and mind.

The memory is likely to err, Vives thinks, in passing from one thing to another similar to it, i. e., Pro Gregorio, Georgium; Pindarus pro Pandarus. This similarity may be in any part of the word, beginning, middle or end. One may err in the case of two men, who were illustrious for the same achievements. “In eloquence Demosthenes and Cicero; Scipio for Q. Fabius in the Punic War; Aristotle for Plato in Philoso-

¹ Ibidem.

ply. The same error may occur when there is similarity of time, place, action or qualities. As the eyes of the body are bewildered and disturbed by similarity, so is the memory. When the memory is in this state, it is impossible to give a correct decision."¹

Naturally we desire to know what is the cause of this likelihood of error. Vives tells us that there was not sufficient attention given when the subject-matter was first studied. The intellect due to inadequate reflection did not pass it on to the memory whole and distinct: "*Intelligentia non satis animadvertit, quae offeruntur, ut integra ea distinctaque posset memoriae commendare.*"² It is, however, possible that the intellect did its part but that the memory did not guard its treasure properly. It is also probable that when the subject-matter was recalled for further consideration, care was not taken to reproduce it intact. A reason for this condition may be pure negligence or a disturbance in the mind due to sickness or some passion, such as anger. The difficulties may be summed up by stating that they are due to faulty receiving, guarding, or reproducing on the part of the memory.

Vives maintains that if an occasion arises, wherein one is being forced to recall a particular matter, the result is a great mental disturbance. A similar situation arises, when some foreign element is introduced, i. e., if the question is asked: "Did you salute Peter Toletanus in the forum yesterday?" I may not have paid sufficient attention and consequently could not remember. But if a second person was mentioned, as for instance: "Did you salute John Manricus or Peter Toletanus in the forum yesterday?" the difficulty of deciding is greater. This is more complex because

1 Ibidem, p. 520.

2 Ibidem.

two acts are now required instead of one, the act of rejection and of selection.¹

Another important element that must be considered is that of time. If this is disregarded, the results are likely to be quite as bad as when one picture is painted over another without any interval of time.² This brief review of the practices or exercises, which are conducive to a good memory, shows the concrete comprehension of the subject possessed by Vives. His exposition of the difficulties to be overcome and the causes of a weak memory and of forgetfulness are precise, direct and modern.

There is no question of the place of virtue in this comparison with the educators of the nineteenth century. Their views on the subject were definite, though perhaps expressed by a different term. For Herbart, "Virtue or morality is the end of education."³ For Froebel, "Education should lead and guide man to clearness concerning himself and in himself to peace with Nature and unity with God"⁴ Vives says, "*Sola utique pietas via est perficiendi hominis: quare haec una est rerum omnium necessaria.*"⁵ Piety is the means, he says, by which our eternal happiness, union with God is to be accomplished. With this set forth as the highest aim of man, all training and education, according to Vives, should have a virtuous and a religious tone. For Vives a virtuous man is one whose life is directed by well formulated rules. Piety is not only a general aim of all studies, but it is the aim of each particular subject pursued. "*Quo circa reliquae artes ac disciplinae omnes, religione excepta, pueriles*

1 Ibidem.

2 Ibidem.

3 Herbert, J. F. *Outlines of Educational Doctrine*, p. 7, Trans. by A. F. Lange, New York, 1901.

4 Froebel, F. *The Education of Man*, p. 5.

5 *Opera*, Vol. I, *De Disciplinis*, p. 438.

sunt lusus." Every subject which is open to the investigation of man is based upon the works of God and is therefore good in itself. According to the sacred writers, all branches of learning studied with the proper motives will lead us to God. This was the idea of Vives. Knowledge pursued for fame, for riches or to satisfy curiosity, etc., was condemned by him. Every subject, before undertaken should be weighed from the viewpoint of the help to be derived for the advancement of piety.

In his treatise on the "*Causes of the Corruption of the Arts*," Vives argued that disputations, the powers of oratory, and astuteness of rhetoric were being pursued from sinister motives and that they were being employed for evil purposes. Those very means, he continues, which God gave and which He intended to be employed in the search for truth were being used by unscrupulous men in defense of the false. All this should be changed and men should pursue these studies with the motives that actuated their pursuit by the early Christians. Vives was of the opinion that the good sections of heathen authors should be read. He saw in them a great deal that was worth while and perhaps as much that was dangerous. In some, at least, of the works of these writers, virtue is lauded and vice abhorred. Treatises of this kind not only may, but should be read.

The parents, first of all, must be examples to their children of uprightness and piety. They must provide for a similar example in those to whom the care and instruction of the boy is confined. From the very beginning the good should be brought before the mind of the child as the object of love, as something to be sought; the bad the object of hate, as something to be avoided. Vives believes that if fear is the source of

power for the control of pupils, then there is little chance for the development of the virtuous in boys. When their minds are freed from this medium of control boys wander about without restraint and fall into every kind of vice. If this is so, what opportunity is there for the development of the love of the good? Love and reverence, according to Vives, should be the controlling factor. If this is maintained at home there will be little trouble in maintaining it at school. If this should not be effective, recourse must be had to punishment.

Suitable passages should be chosen from Holy Scriptures, passages which are, as it were, prescriptions against vice; these the pupil should be taught to accept as the word of God. Vives points out that children must be taught to love God and to regard Him as Master of all to Whom they must render an account of their lives as they do to their teacher of the lessons of the school. There are various faults which are likely to show themselves at particular stages in a boy's growth. For these the teacher should be vigilant and fortified with remedies. In the study of nature the teacher has a special opportunity of setting forth the wondrous work of God and of leading the pupils to a deeper reverence and worship of Him.

That which might be called the first step toward the socialization of class work is present in the educational system of Vives. The pupils work together and thus help each other in a common project. Vives has the older pupils explain to the younger ones the matter formerly presented to them by the professor. The younger ones listen attentively, ask questions and venture to speak to their advanced companions in Latin. This was a sort of a play school, in which, nevertheless, serious work was done.¹

1 Ibidem, Vol. I, De Disciplinis, p. 468.

There is no mention in the writings of Vives, of examinations, written or oral, as such. The one plan he suggested, by which to judge the improvement of the pupil, to which a reference has been discovered, is that of comparison. The pupil was asked to preserve his written work that from time to time a comparison of his more recent endeavors might be made with it.¹

1 Opera, Vol. I, De Disciplinis, p. 470.

CONCLUSION.

This dissertation maintains that while Vives emphasized the need of information, his method of teaching harmonizes with the idea of education as development. He speaks very emphatically on the subject of sense training. The importance of sight for observing, of hearing for profiting by the experiences of others and of touch for mechanical pursuits, is greatly emphasized. The term self-activity is not found in the literary contributions of Vives and yet, work was prescribed for the child which demanded it: the double translation, the comparison of styles of authors, the compilation of a vocabulary and note-book making. Interest was maintained by the introduction of the child's past experience, by variance in the nature of the examples, and by the commencement of each phase of the work with easy and simple matter. Apperception is nowhere spoken of as such in the writings of Vives, but through the comparison of light to learning, of the mind to a grinding mill and the learning process to that of digestion, it is implied. Play could not be called a prominent factor in the system of Vives. Latin words were, however, practiced at play and in games. The wonders of nature were observed on recreational walks. Chess playing was advised because it demanded reason, judgment and memory. As to the spirit of the school, Vives declared that good-will, friendliness and reciprocal love should prevail. The proper development of memory and association of ideas received a full and detailed exposition. The suggestions and rules advanced by Vives have been awarded special distinction by Sir Thomas Reid. Nothing which would

alter them in substance has been added to or subtracted from them by the psychologists of the nineteenth century. The opinion of Vives that all branches of learning should lead to and increase piety is a most praiseworthy one and expresses well the purpose and aim of Catholic training. The idea of Vives regarding examinations, viz., by comparison of the pupil's work with his former work is undoubtedly in advance even of our system of today. Great credit is due Vives for the plan and its adoption. This dissertation does not maintain that in the writing of Vives the terminology of the nineteenth century is found. It does not maintain that there is a method or a system which is called inductive, though there is frequent use of the expression, "from particulars to the universal," in the study both of the arts and of the languages.

Though the faculty theory has been condemned by some educators; though specific training is held non-transferable; though the system of Vives was founded on that of Aristotle and Scholasticism, these facts do not detract from the advanced modern psychological principles he employed. Even were we to admit that his system of psychology was wrong, we cannot deny the presence in theory and practice of those very principles proclaimed by Pestalozzi, Herbart and Froebel. These principles are there, though not in a well defined and developed state.

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VITA.

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